Editorial

The findings that NMDA receptors for excitatory amino acid neurotransmitters participate in a major and unique way to promote long-lasting changes in brain organization and function have major importance for psychobiology. For example, NMDA receptors appear to contribute to the establishment of brain dysfunctions subsequent to trauma (e.g., anoxia), as well as to the molding of the brain during development. NMDA receptors also make significant contributions to the establishment of long-term potentiation, a neurophysiological analogue of memory. The latter findings in particular have led to investigations of the effects of NMDA receptor antagonists on behavioral measures of learning and memory, with findings suggesting that learning and memory are impaired by such treatments.

This issue contains a target article by Keith and Rudy questioning the relevance and depth of the analogy between the effects of NMDA antagonists on long-term potentiation with effects on performance in learning and memory tasks. The article was accepted with the authors' agreement that responses to the paper also appear in this issue. The target article is therefore followed by responses from Gallagher, Morris, and Staubli, a rebuttal from Rudy and Keith, and finally a letter from Lynch and Staubli at the end of the issue.

In these papers, investigators from four laboratories look at precisely the same data only to reach very disparate conclusions. The readers should not be surprised, therefore, to find some passion in the exchange; actually somewhat less is contained in these pages than occurred while I monitored the receipt of the papers. I think you may share my view that, aside from the position one takes on the specific issue of the role of NMDA receptors in memory, the target article and responses raise substantive conceptual issues about the level at which analogies between models of memory and "real" memory must be maintained before the results can be seen as mutually supportive.

I hope you find the exchange of views interesting and useful. I encourage others to submit target papers to *Psychobiology* appropriate for responses in a format similar to that presented in this issue.

Paul E. Gold
Editor